

LAPHOUND NEWS

VICTORIA LAPIDARY & MINERAL SOCIETY

P.O. Box 5114, Station B
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Website :: www.vlms.ca

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The Newsroom

Announcements

Constitution and By-Laws

The VLMS Constitution and By-Laws have been reviewed and brought up-to-date over the course of the summer. Copies have been circulated to the membership for discussion at the September meeting. Final acceptance of the changes (by membership vote) will be held at the October meeting.

Meetings

The next regular members meeting will be held as follows:

Date: September 11, 2017

Place: Burnside Lawn Bowling Clubhouse, 274 Hampton Road, Victoria, BC

Time: 7:30 pm

Field Trips

The fall schedule for field trips will be announced at the September meeting.

Courses

Presently, there is only one Basic Silversmithing course planned for the fall. This course is expected to be full, but please feel welcome to confirm with the workshop at vlmsworkshop@gmail.com to see where you might expect to be called for the next course. Courses are, in large part, member driven so please put your name forward if you are interested.

New to the course selection this fall is one entitled "An Introduction to Wire Weaving". This new course will only be a two day event held on Thursday evenings on Oct 26th and Nov 2nd. Class size is limited to six participants so please get your name in a timely manner (vlmsworkshop@gmail.com). Materials are included in the price of the course which is expected to be \$25 per person. There are no special rates planned for couples or families.

Programs

2nd Annual VLMS Club Members' Show and Sale at Leonardo daVinci Centre – October 14-15, 2017

As this event is fast approaching and again working with a zero dollar advertising budget, your creative ideas in communication of this event to the public are welcome. A meeting of minds for this event is tentatively scheduled for Tuesday, September 12th with more information available at our next club meeting on Monday September 11th.

VLMS Rockhounding Adventure to the Fraser River-November

More information is still being gathered for this first ever club sponsored event, so please stay tuned to what's happening during our monthly club meetings. A request for information has been sent to the company that offers these adventures up the Frazer River during the lower tide months and updates will be reported via club meetings and an email once details are confirmed.

2018 VLMS Rock and Gem Show – Leonardo daVinci Centre – March 16-18, 2018

It is never too early to start getting ready for our Annual Show. Mark it in your calendars and stayed tuned to how you can help make our annual hosted event a continuing show stopping success.

2nd Annual VLMS Bus Trip to the BC Gem Show on Saturday, April 7, 2018 in Abbotsford

Many requests and inquiries have been received about a return trip to this annual show on the mainland, noted as the biggest show in BC. Last year's trip was enjoyed by all who took advantage of this excursion and sadly missed by those that wanted to come but just could not make it. If you are interested in being part of event, make sure your voice is heard at the club meetings or by email correspondence.

Costs are expected to be similar to last years, however, with an increase to the shared bus rental fee. More details will be finalized closer to the event with a possible deadline of March 31st.

VLMS hosts the 2018 Vancouver Island Zone Gemboree – July 26-29, 2018

It is our turn to host this annual island event....and after the last two outstanding hosted events by Campbell River's and Cowichan Bay's clubs, we have our work cut out for us. This year's trip up to the Port McNeill area was outstanding and most memorable for many of our own club members that that ventured the journey. Although we have many ideas for some excellent Rockhounding Field Trips for our area, we have chosen the Sooke area as our base for next year's event. We are tentatively booked as an event at the Sooke River Campground for the days of Thursday July 26th through to Sunday July 29th. We will need a few key dedicated volunteers to help pull this event together and to host events for the registered members.

September Meeting

The program for the September meeting includes a presentation on Peterson Mt, California (Hallelujah Junction) Smokey Quartz and Amethyst Crystals by Ron Zeilstra.

October Meeting

The program for the October meeting includes a presentation of the history of Island Copper mine by Brian Welchman. This is a must see presentation, Brian has worked as management in mines around the world.

Reports

President (Vanessa)

As we prepare for the return of club meetings and reconnecting with rock friends, I cannot help but be torn between being excited about the welcoming of new club members, being able to share our love of rock, minerals and must go-to locations, and possible new events and rockhounding opportunities with that of the feeling helpless to the health struggles of some of our fellow members; Members that have become dear friends and loved as dearly as our rock family. Although health and well-being has had a shared a unique connection with Rocks and Minerals throughout humans' history, I cannot feel anything but helpless when someone we care about is struggling.

We are deeply saddened to share that our dear, dedicated club treasurer, Greg Shea, has passed. David Jackson, current member at large, will be filling in for Greg until the next club elections.

Membership (Margaret)

Currently, the VLMS holds 114 memberships which breaks down into 78 single adults, 23 couples, 2 students, and 11 families or, alternatively, 145 adults and 19 juniors.

Field Trips (Gilles)

June – a gold-panning excursion to Lost Creek was the last field trip before the summer break.

As we get into the “cooler” weather of fall, we can expect a return to our normal field –trip schedule. As usual, all field trips are subject to change due to weather or unforeseen circumstances. Please confirm with Gilles (250 382-6119) with your participation plans and event meeting location and time.

Library (Sylvan)

I have purchased some books for the Library. As usual, VLMS Stick pins and sew-on-crests will be for sale at each meeting for \$6.00 and \$3.00 each respectively. Also, let me remind everyone that the Library books are due back at September meeting. Please note, if anyone has Library books that they signed out in 2016/2017 please return them at your earliest convenience. Finally, I hope everyone had a great summer and I will see you at the September meeting.

Sunshine Corner (Patrick)

The Sunshine Corner has been dormant for the summer but now must report the sad news that our treasurer, Greg Shea, has passed away on August 24th. Most of the membership knew that Greg had medical problems but few of us realized how serious the situation had become. Greg was a most popular member of the VLMS and he will be greatly missed by the Society. I am sure that the Executive will provide further details, but at this time, Sunshine Corner would like to express our sincere sympathy to Allana and Family, as they deal with this very difficult time. To Greg Shea, we give him the ancient Gaelic farewell - "slan agus Beannacht" (Goodbye and God Bless you).

It was wonderful to see RoseMarie in the workshop over the summer, as she still shines with her heart of gold; it continues to be weight on her. Our love and prayers to you RoseMarie on your path of recovery back to good health.

To those that know...Vanessa's minor tumble during her Gemboree field trip adventure is healing slowly, but surely. She is still upright and moving forward and will see you all in September.

Finally, Sylvan's foot is completely healed but she is now dealing with a blood clot in her legshe is determined to be at the September meeting.

Island Zone (Vanessa)

The most recent Zone meeting was held during the Island Gemboree – at the Cluxewe Campground resort, just north of Port McNeill. Our club's \$500 donation to the Island Zone was much appreciated by all and hopefully will be able to alleviate any constraints this island club-collective may have. As the Island Zone is comprised of representatives from each of the six island Rock and Mineral clubs, its sole source of operating funds come from a share of funds raised from the annual Gemboree. On that note, all VLMS members are reminded that it is our turn next year to host this event.

Also, note that each club has three representatives that hold positions for staggered three year terms; thus, each year one representative position comes up for renewal.. Please contact either Vanessa Steffens or David Jackson if you are interested in supporting our club in this role and learning more about what is happening with our neighboring clubs up the island.

Workshop (Vanessa)

The workshop had steady use throughout this summer with 2 scheduled courses and lots of open use time. This September we will be offering a free one-day Beach Wrap wire-wrapping course to our Junior club members, on Saturday September 23rd from 11am to 1 pm. All tools and materials will be available for your project, however, if you do have your set of jewelers' pliers (flat-nose, or half-round, etc), you are certainly welcome to bring them to use.

Editor (Gary)

This issue constitutes the first in the new LapHound Newsletter quarterly publication schedule (August, November, February, and May). This issue is intended to get members in the mood for a busy fall schedule that includes presentations at both the September and October meetings, the VLMS Rock&Gem Show and Sale scheduled for October, and a rock-hounding excursion to the Fraser River in November. Finally, I will take this opportunity to remind all members to peruse the VLMS Constitution and By-Law documents which have been updated during the summer and circulated to everyone – these are the guidelines that determine how “your” club is set up and maintained.

Business

Content in this section is Member-driven. The Newsletter will provide space for Members to advertise their interests to other club members. This could involve buying, selling, or trading materials and/or equipment. It could also involve a desire for collaboration. (Editor- to date, no one has come forward with content for this section ... I will leave it in for this edition and if there are no takers then I will remove it).

RockHound Poems

The following poem by Digger Purdy was suggested by Vanessa and seems very appropriate when I look out over my workshop. Should any member feel the urge to write a poem about rocks or gems or what we do with them, I will publish it in a subsequent Newsletter.

A Rockhound's Home – Digger Purdy

Rocks on the lawn, rocks in the shed
Shovels & hammers under the bed
Boots & knapsacks beside the front door
Clay & grit all over the floor
Slabs & specimens on the chairs
Boxes of crystals on the stairs
A Rockhound's home is such a disgrace
But, oh, it's such a happy place.

Digger's poem is pretty straightforward with everything right there in front of you....not so with Victoria's poem below which requires much more interpretation.

The Rockhound - Victoria Anderson-Throop

The warmth of stones emits small sounds
Like whispers to the skin
Their color pure --Sun's fingerprint-- that
Blazes from within.
Scruffy pockets, tiny hands
Collect a scope of shapes--
And big girls yearn for dazzle
As they diamond pin fur capes.
Some hands are called
By pebbles on
Every casual walk.
Eyes-- eagle search -- another find--
There is no worthless rock.
Some traverse to the finest rags
From birthhome in far off mine.....
But the sweetest stone is
Hammer smashed--
Plain rock divulged divine.

Fun Facts

Lappy the Lapphound

" All that glitters isn't gold
....but it might be opal!!!!



Foxy the Foxhound

" Diamonds are a girls' best friend
....cubic zirconia... not so much !!!!



Lappy – visits the old country!

Gary: Lappy, what did you get up to this summer?

Lappy: I just got back from a visit to my ancestral homeland...Finland. I am a Finnish Lapphound, after all.

Gary: Wow, you lucky dog, what part of Finland? And did you get a chance to get out and do some backwoods hiking?

Lappy: Well, as a matter of fact, I did. I can't really tell you where in Finland I was because I am not so good with maps but wherever it was I managed to find a couple of really neat stones.

Gary: Oh, what did you find?

Lappy: Labradorite¹ for one....some chrysoprase², and a shiny little piece of rhodonite³ For the life of me I don't know how the Labradorite got to Finland ... someone must have been visiting from Labrador and dropped it by mistake.

Gary: Well, that is quite a collection....good for you. By the way, Labradorite is just a name for a particular type of rock; it doesn't mean that it can only be found in Labrador. Often the person who first discovers a particular stone names it after the location in which it was found...as it happens, there are large deposits of labradorite in Labrador.

Lappy: Oh, I get it, that must mean that Amazonite⁴ is found along the Amazon river...cool!

Gary: err...ummm! No actually, as far as I know, amazonite has never been found along the Amazon river.

Lappy: Wait a minute, now you are confusing me, I am tired, I think I have jet lag....I am going to take a nap!

Gary: Sweet dreams, Lappy.

Foxy and Friends Go To The Beach

It was hot in the condo but unlike most days Foxy wasn't too concerned because she knew that she was going to the beach with her friends: Pippa the Poodle and Dotty the Doberman. This was an unlikely collection of misfits if there ever was one with Pippa's very small stature (always so prim and proper – everything had to be just so), Dotty's long, sleek frame (considerably less attention to detail, a bit of a flake and sometimes not so nice disposition) contrasted with the long haired (and just a bit frumpy) Foxy and her cool demeanor. Pippa and Dotty argued often and it was Foxy (the intellectual one) whose job it was to step in and arbitrate. For this outing the girls decided not to wear their finest jewelry but not without considerable discussion. Pippa had some Azurite⁵ bobbles that she often affixed to her "poodle puffs" but, as Foxy reminded her, they always seemed to come loose and fall off – not what one wants at the beach. Dotty's favorite jewelry were her Jade⁶ charm bracelets which, on special occasions, she wore around her ankles.

Dotty: Isn't this a special occasion? We might meet some guys!

Pippa: Heaven forbid.

Foxy: The way you run and jump around, Dotty, those bracelets will be long gone before you meet any guys!

With Foxy's oversight, common sense and practicality prevailed and the girls decided to wear their favorite collars. After all, the collars were each adorned with a bright and colorful birthstone: Pippa (Aquamarine⁷), Dotty (Tourmaline⁸) and Foxy (Tanzanite⁹). The girls looked very smart indeed as they headed out to the beach.

The beach was quite crowded, it was hot but there was a cool breeze blowing in off the ocean. Pippa and Dotty knew that Foxy liked to look for shiny objects amongst the rocks and for awhile they focussed on just that.

Pippa: Foxy, look at this pretty white stone, it must be worth a lot of money.

Foxy: Hmmm, not really, it is a nice piece of Quartz¹⁰ but because it is so common it is not very valuable.

Dotty had a very short attention span but she was determined to try. Wedged between a water-worn Granite¹¹ boulder and a much smaller piece of Dallasite¹² was a very shiny stone that reminded Dotty of her ankle bracelets.

Dotty: I think I have found some Jade.

Foxy: The term "jade" can be misleading – it refers to either Jadeite¹³ or Nephrite¹⁴. Here in BC, it is most likely nephrite. Of course, the stone you have found could also be Serpentine¹⁵ or "false jade". Let's have a look.

Pippa: It's probably a piece of glass¹⁶.

Dotty: Pippa, you are such a "Debbie Downer".

Foxy (giggling): Dotty, in this case, Pippa is right...it is a piece of glass! Quite pretty though.

At that very moment, a big German shepherd came charging out the water and right beside the girls,

in a ferocious manner, he shook himself off - thoroughly dousing them in the process. Then, just as suddenly, he ran off.

Pippa: That's rude.

Dotty: I think he smiled at me.

Pippa: Hmmph! Not my type!

Foxy (to herself): Will I ever meet a proper guy?

Note: all of the technical information presented in this section (and below in the Appendix) was obtained from the web i.e., Wikipedia. For those interested, there are many more sites that deal with the subject matter and in much more detail that quoted above/below – just Google it!!!

Acknowledgements

Once again I would like to thank all those members who contributed to this Newsletter – it will only be as useful and complete as the information you provide.

Forum

Editorial Comment

As evidenced by our Sunshine Corner contribution, life is more precious than any stone – it can be here one moment and gone forever the next. Given the inevitable, we all have good reason to find activities for ourselves that bring us joy and fulfillment. It has been my experience that rocks and gems can form the basis for that type of activity.

Appendix

1.



Labradorite is a feldspar mineral found near the town of Nain in Labrador, Canada. It has also been reported in Scandanavia and various other locations worldwide. Labradorite can display an iridescent optical effect known as labradorescence which involves the peculiar reflection of the light from submicroscopical planes orientated in one (but rarely two) directions.

2.



Chrysoprase, chrysoprase or chrysoprasus is a gemstone variety of chalcedony (a silica family that includes agate, carnelian and onyx). Its color is normally apple-green, but varies to deep green with the color being derived from nickel content The darker varieties of chrysoprase are also referred to as prase. Tanzania has long been a big producer of Chrysoprase.

3.



Rhodonite is a manganese inosilicate (structure composed of silicate tetrahedrons). Pink rhodonite (native to Vancouver Island and to many parts of the world), coupled with black manganese oxides, is sometimes used as gemstone material. Rhodonite has also been worked as an ornamental stone. Rhodonite is the official gemstone of the Commonwealth of Massachusetts.

4.



Amazonite (sometimes called "Amazon stone") is a green variety of feldspar. The name is taken from that of the Amazon River from which certain green stones were formerly obtained, but it is doubtful whether green feldspar occurs in the Amazon area. Amazonite is found originally in Russia but more recently in Colorado. It has limited value as a gemstone because of its relative softness.

5.



Azurite is a soft, deep blue copper mineral produced by weathering of copper ore deposits. It is also known as Chessylite after a location in France. The mineral, a carbonate, has been known since ancient times, and its blue color is exceptionally deep and clear, and for that reason the mineral has tended to be associated since antiquity with the deep blue color of low-humidity desert and winter skies.

6.



Jade is an ornamental rock, mostly known for its green varieties, which feature prominently in ancient Asian art. The term *jade* is a general term applied to two different metamorphic rocks that are composed of different silicate minerals, namely (i) jadeite, and (ii) nephrite. Jade has been a favorite carving material for many centuries.

7.



Aquamarine (March birthstone) is a blue or cyan variety of beryl. It occurs at most localities which yield ordinary beryl i.e., Sri Lanka, Brazil, Madagascar and in Wyoming and Idaho here in North America. The pale blue color of aquamarine is attributed to Fe^{2+} whereas Fe^{3+} ions produce golden-yellow color. When both Fe^{2+} and Fe^{3+} are present, the color is a darker blue as in maxixe. Note Fe refers to iron.

8.



Tourmaline (October birthstone) is a crystalline boron silicate mineral compounded with elements such as aluminium, iron, magnesium, sodium, lithium, or potassium. This brightly colored Sri Lankan gem is identical, minerally, to *shorl* and has special pyroelectric properties that enable it to attract and then repel hot ashes. This unique property led the mineral to be known as the Ceylonese Magnet. It is an established semi-precious gemstone.

9.



Tanzanite is the blue and violet variety of the mineral zoisite, belonging to the epidote group. The gemstone (December birthstone) was discovered in 1967 and only exists in Northern Tanzania. In its rough state tanzanite is usually colored a reddish brown, and much of it requires heat treatment to remove the brownish "veil" and bring out the blue violet of the stone.

10.



Quartz is rich in silicon and is the second most abundant mineral in Earth's continental crust, second only to feldspar. There are many different varieties of quartz, several of which are semi-precious gemstones. Since antiquity, varieties of quartz have been the most commonly used minerals in the making of jewelry and hardstone carvings, especially in Eurasia.

11.



Granite is a common type of igneous rock that is granular in texture. Granites can be predominantly white, pink, or gray in color and typically comprised of 20% to 60% quartz by volume, and at least 35% of feldspar. Granite is nearly always massive (lacking any internal structures), hard and tough, and therefore it has gained widespread use throughout human history as a construction stone.

12.



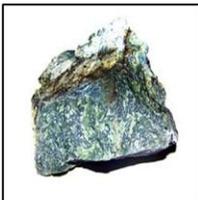
Dallasite is a breccia made of quartz, epidote, altered basalt and pumpellyite. The stone is named after Dallas Road right here in our very own city, Victoria. It is considered the unofficial stone of British Columbia's capital city. Dallasite is found in Triassic volcanic rocks of Vancouver Island and is considered the third most important gem material in the province.

13.



Jadite is a pyroene (a large class of rock-forming silicate minerals, generally containing calcium, magnesium, and iron) and is the “rarer” form of jade. Depending upon impurity content, jadeite color can vary from deep green, white, black to a beautiful pink. Jadeite is found on most continents of the world and, in particular, is found right here in British Columbia although the most common form of jade here is of the nephrite variety.

14.



Nephrite is a variety of the calcium, magnesium, and iron-rich minerals that can be associated with one form of asbestos but is more widely known as a type of jade. Nephrite jade possesses mainly grays and greens (and occasionally yellows, browns or whites), Nephrite jade is an ornamental stone used in carvings, beads or cut gemstones. Western Canada is the principal source of modern lapidary-grade nephrite.

15.



Serpentine is typically an olive green with a smooth scaly surface. Its Latin genus is *serpentinus* or “serpent rock” . Serpentine comprises a wide variety of magnesium-iron minerals and can be used as a source of magnesium and asbestos. Serpentine has a long history in jewelry making in the form of carvings known as “false jade” or “Teton jade”.

16.



Glass is a non-crystalline amorphous solid whose primary constituent is silica. Different additives are used to make glasses for specialized applications. Natural glasses such moldavite and obsidian can be formed through intense heat in conjunction with silica i.e., volcanoes, lightning. Glass is one of the most common and most useful substances known to man.

4.



Gold (Au) is a bright, slightly reddish yellow, dense, soft, malleable and ductile metal. It is often found in free elemental (native) form, as nuggets (or grains) in rocks, veins and alluvial deposits. Its many uses include jewelry, coinage, and electronics. Gold is found worldwide but as of 2014, the largest producing nation is China.

5.



Lead (Pb) is a soft, malleable, and heavy metal with a density exceeding that of most common materials. Lead is bluish-white; it tarnishes to a dull gray upon exposure to air. It is easily extracted from its ores and was known to prehistoric people in Western Asia. Lead is a neurotoxin that accumulates in soft tissues and bones, damaging the nervous system and causing brain disorders and, in mammals, blood disorders.

6.



Molybdenum (Mo) does not occur naturally as a free metal on Earth; it is found only in various oxidation states in minerals and is associated (and sometimes confused) with lead. The free element, a silvery metal with a gray cast, has the sixth-highest melting point of any element. It readily forms hard, stable carbides in alloys, and for this reason most of world production of the element (about 80%) is used in steel alloys.

7.



Silver (Ag) is a soft, white, lustrous transition metal. It exhibits the highest electrical conductivity, thermal conductivity, and reflectivity of any metal. Most silver is produced as a byproduct of copper, gold, lead, and zinc refining. Silver has long been valued as a precious metal. As one of the seven metals of antiquity, silver has had an enduring role in most human cultures.

8.



Vanadium (V) is a hard, silvery grey, ductile, and malleable transition metal. The elemental metal is rarely found in nature, but occurs naturally in about 65 different minerals and in fossil fuel deposits. It is produced in China and Russia from steel smelter slag. Large amounts of vanadium ions are found in a few organisms, possibly as a toxin. The oxide and some other salts of vanadium have moderate toxicity.

9.  Zinc (Zn) is chemically similar to magnesium: both elements exhibit only one normal oxidation state. Zinc is the 24th most abundant element in Earth's crust and has five stable isotopes. The most common zinc ore is sphalerite (zinc blende), a zinc sulfide mineral. The largest workable lodes are in Australia, Asia, and the United States. Brass, an alloy of copper and zinc in various proportions, was used as early as the third millennium BC.

10.  Manganese (Mn) is not found as a free element in nature; it is often found in minerals in combination with iron. Manganese is a metal with important industrial metal alloy uses, particularly in stainless steels. Manganese phosphating is used for rust and corrosion prevention on steel. Ionized manganese is used industrially as pigments of various colors. It is a required trace mineral for all known living organisms.

11.  Asbestos is a set of six naturally occurring silicate minerals, which all have in common long thin fibrous crystals that can be released by abrasion and other processes - for this reason, despite many desirable properties, prolonged exposure to it results in debilitating respiratory illnesses and should be avoided. They are commonly known by their colors, as blue asbestos, brown asbestos, white asbestos, and green asbestos.

12. <http://www.alltribes.com/>

13.  Rhodonite is a manganese inosilicate (structure composed of silicate tetrahedrons). Pink rhodonite (native to Vancouver Island) coupled black manganese oxides is sometimes used as gemstone material. Rhodonite has also been worked as an ornamental stone. Rhodonite is the official gemstone of the Commonwealth of Massachusetts.

14.  Honduran Opals vary from milky-white to matrix based, are found in volcanic black basalt, and are formed mostly by volcanic eruptions. Due to the porous nature of this opal it can be polished on a warm wheel and no need for water. Best results are obtained on hot wheel to have a high polish. Honduras has the oldest recorded opal mines all over the world.

15.



Jasper is an aggregate of microgranular quartz and/or chalcedony and other mineral phases. It is opaque, and usually red, yellow, brown or green in color; but it is rarely blue. The common red color is due to iron inclusions. It can be highly polished and is one of the traditional birthstones for March.

16.



The complete, all-diamond grinding & polishing machine- 1/4HP, 1800 RPM, sealed capacitor motor. 115V, 60 Hz motor. Mike Hill is our local supplier.

17.



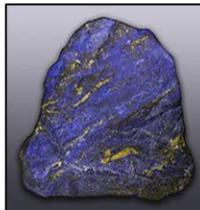
Sugilite is also known as lavulite, royal azel, cybeline, and wesselite. It is a relatively rare pink to purple cyclosilicate mineral and is mostly translucent. Sugilite was first discovered in Japan, but is also found in Quebec, Italy, Australia and India.

18.



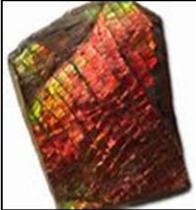
Piranha Agate comes from the State of Parana, near Guarapuava, Brazil. The name is believed to be a misspelling of its location. No gemstone is more creatively striped by nature than agate, chalcedony quartz that forms in concentric layers in a wide variety of colors and textures. Each individual agate forms by filling a cavity in host rock. As a result, agate often is found as a round nodule, with concentric bands.

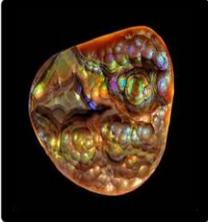
19.



Lapis lazuli or lapis for short, is a deep blue metamorphic rock used as a semi-precious stone that has been prized since antiquity for its intense color. As early as the 7th millennium BC, lapis lazuli was being mined in northeast Afghanistan. Today, operational mines are found in Afghanistan, Pakistan, Russia, Chile, Italy, Mongolia, US and Canada.

20.  Shungite is a black, lustrous, non-crystalline mineraloid consisting of more than 98 weight percent of carbon and is found mainly in Russia. Shungite has two main modes of occurrence, disseminated within the host rock and as apparently mobilised material. Migrated shungite, is bright and lustrous. Shungite has been used as a water purifier and a pigment for paint.

21.  Ammolite is an opal-like organic gemstone found primarily along the eastern slopes of the Rocky Mountains of North America. It is made of the fossilized shells of ammonites, which in turn are composed primarily of aragonite, the same mineral contained in nacre, with a microstructure inherited from the shell. It is one of few biogenic gemstones; others include amber and pearl.

22.  Fire Agate is a variety of Chalcedony (Quartz family). It has a translucent deep reddish-brown base, with flashes of orange, red, green and gold. The colors are caused by light interference on thin layers of iron oxide or limonite crystals within the Chalcedony. Fire agates are found in Mexico and south-western US states e.g., near Safford AZ.

23.  Topaz is a silicate material of aluminum (Al) and fluorine (F). Pure topaz is colorless and transparent but impurities cause it to occur in a variety of colors. Topaz is commonly associated with silicic igneous rocks e.g., granite. Topaz can be found worldwide, including locations in Utah and Texas; Brazil is the world's leading producer.